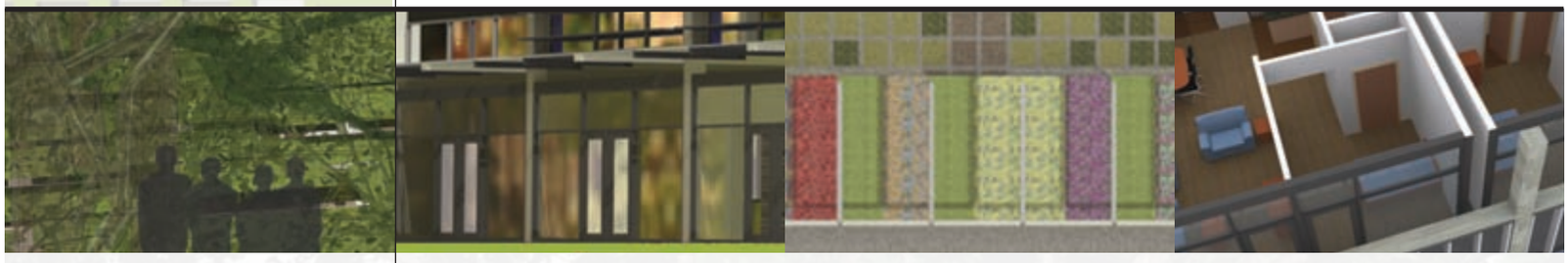
Second place

CATEGORY 1

Nature in Neighborhoods:
Integrating Habitats Winners Series

Mixed-use development and riparian forest

Living Graft



River connection

Multi-functional mesh

Directional solar screens

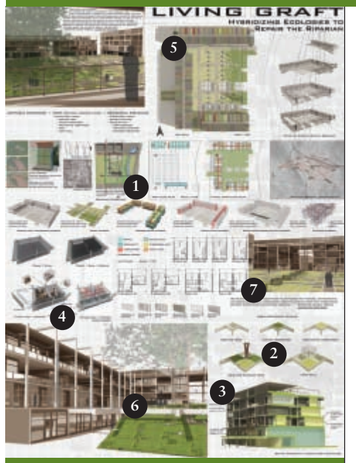
Mobile module

Rooftop options

Edge interactions

Grid system cistern

Keep Nature in Neighborhoods
METRO

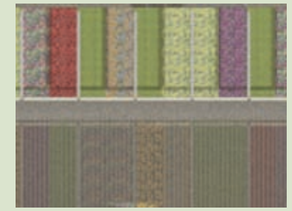


Snapshot of a winner

As urban areas develop in response to new preferences and pressures, the built environment will need new ways to flex and adapt to these changes. Living Graft's modular living unit can be reconfigured to blend with existing neighborhoods, and its mobile mesh grid system supports diverse native vegetation. Ecological benefits can be maximized by designing this flexible system to enhance the riparian ecosystem nearby.

③ Directional solar screens

Paired with glazed windows, solar screens provide privacy, optimize sun exposure and maximize energy efficiency. Six different screens each fill a unique 'solar needs' niche. Ground level screens, and those facing east, west and south, offer various levels of translucency. A series of narrow, thick vertical openings called louvers can be moved and adjusted for west-facing windows, while thinner louvers face east and horizontal louvers face south.

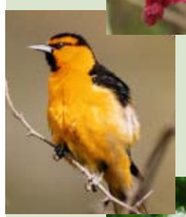


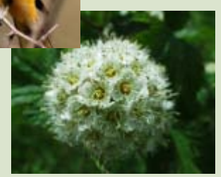
⑤ Rooftop options

Gardens adorn each rooftop. Inhabitants can tend their own garden, install an ecoroof or share the space with others, creating a varied 'naturescape' within the building structure.

Living Graft: *Boundaries of built form are fused — or grafted — to local ecosystems*

Inhabitant profiles





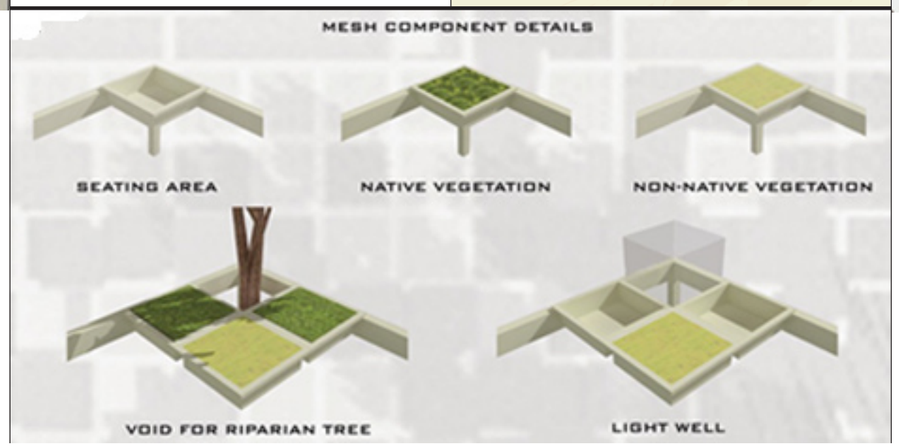
Red flowering currant, Bullocks Oriole, ninebark flower (Curt Zonick)

① River connection

What we connect to and value shapes our quality of life. The development's grand courtyard is oriented towards the site's major amenity: the river. From an ecological and economic perspective, the river's health and proximity is what makes this site unique and desirable for both wildlife and people. Thus, placing natural resource restoration and stewardship within our most important development goals just makes sense.

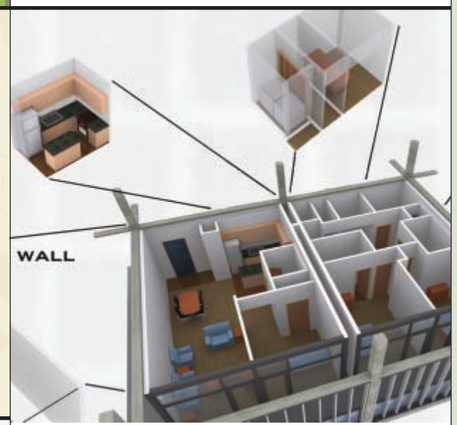
② Multi-functional mesh

An inner courtyard comprised of mesh units — or modules — can be designed to include vegetation, seating areas, light wells, and voids for tree planting. This multi-functional mesh grid simultaneously creates stormwater treatment plazas, recreation areas, and wildlife habitat as the modules are selected and arranged to transition from intensely developed areas toward riparian habitat.



"The modular housing and mixed-use building with its solar screens, insulated wall panels and generous balconies and overhangs seems like a pleasant place to be." – Susan Szenasy, jurist

"A very well-solved project. The architectural landscape dissolves to a natural landscape when it comes close to the river and the natural environment."
– Stefan Behnisch, jurist



④ Mobile module

These modular units are composed of standardized sections for easy construction and flexible (re)arrangement. The units' floor plans can be adapted to accommodate preferred densities, evolving over time as the surrounding neighborhood changes. Within the modular units are kitchen, bath and utility components. The utility connections are common cores that run vertically between the modular units, creating highly energy-efficient buildings.

⑥ Edge interactions

Human development continues to expand into natural environments. These areas - or edges - will increasingly form a critical place where people experience and interact with the natural world.

⑦ Grid system cisterns

Rainwater flows through a system of roof gardens, vegetated mesh ground grids, and plaza channels to a modular cistern system beneath the mesh.

CATEGORY 1

Second place

Mixed-use development and riparian forest

Fusing built form boundaries to landscape ecologies

Riparian corridors, and the human systems and natural ecologies dependent on them, are increasingly disconnected and fragmented by current patterns of urban development. Living Graft proposes new types of development practices and building features that can blend the boundaries of human and natural habitats, while simultaneously providing for the needs of people, fish and wildlife. By focusing on boundary — or edge — interactions, harmonious coexistence of built and natural environments can be visualized and achieved.

Team members

Georgia Institute of Technology
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Jerry Page
e-mail: jerry.page@gatech.edu

Christopher Van Kley

"Excellent. The plan and building are well-conceived and relevant to the site context. The grand courtyard is oriented to the major amenity — the river — and the transition from intensely cultural landscape to riparian habitat is very nice."

– David Yocca, jurist

Jurists

Stefan Behnisch, principal
Behnisch Architects
Stuttgart, Germany
and Venice, Calif.

Joan Nassauer, professor
Landscape architecture
University of Michigan
Ann Arbor, Mich.

Tom Schueler, founder
Center for Watershed Protection
Ellicott City, Md.

Susan Szenasy, editor-in-chief
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New York, N.Y.

Jim Winkler, president
Winkler Development Corporation
Portland, Ore.

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Conservation Design Forum
Elmhurst, Ill.

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Nature in Neighborhoods:
Integrating Habitats Winners Series

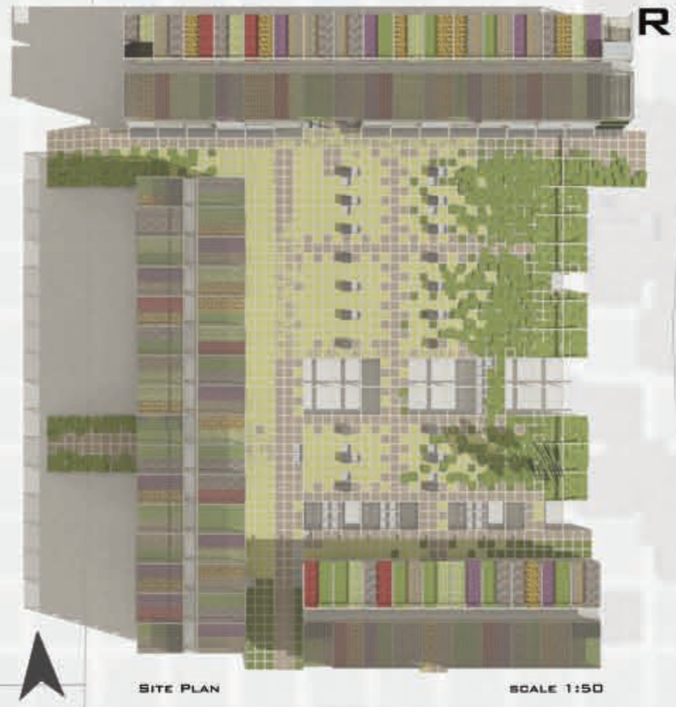
LIVING GRAFT

Hybridizing Ecologies to Repair the Riparian

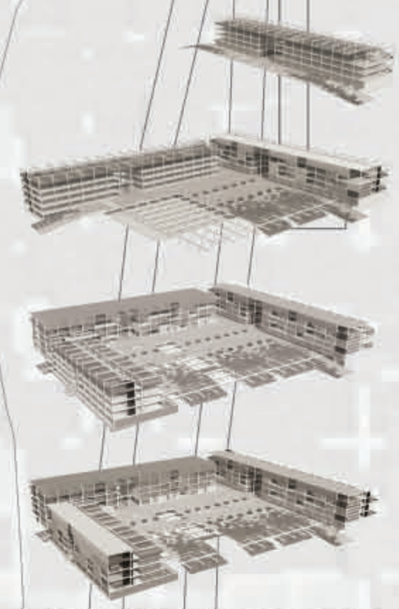
ADAPTABLE FRAMEWORK = MESH (ARTIFICIAL GROUND PLANE) + RESIDENTIAL STRUCTURE

MESH (ARTIFICIAL GROUND PLANE)
- STRUCTURAL FRAME
  - SEATING AREA
  - NATIVE VEGETATION
  - NON-NATIVE VEGETATION
  - VOID
  - LIGHT WELL

RESIDENTIAL STRUCTURE
- STRUCTURAL FRAME
- SHARED SYSTEMS
- MODULAR UNIT
  - CORE MODULES
  - INDIVIDUAL SYSTEMS
  - EXTERIOR TREATMENT



SITE PLAN — SCALE 1:50



POTENTIAL COMPLEX GROWTH SEQUENCE

SITE MAPPING
EXISTING BOUNDARY CONDITIONS AND RELATIONSHIPS

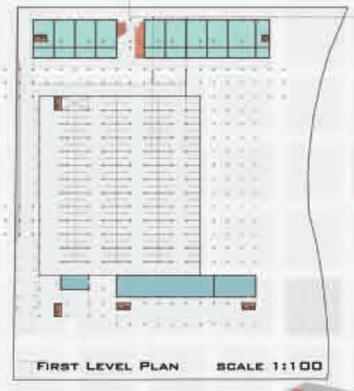
REGIONAL MAPPING
HUMAN'S GRAFTING OVER NATURE SHIFTING OVER TIME

NATURAL GRAFT

HUMAN GRAFT

OVERLAY OF NATURAL & HUMAN BOUNDARIES AND CORRIDORS AROUND, THROUGH, AND WITHIN THE SITE

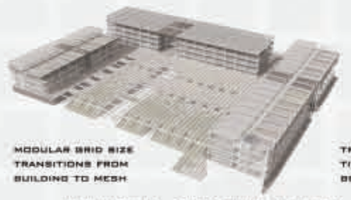
BOUNDARY OPERATIONS



FIRST LEVEL PLAN — SCALE 1:100

TYPICAL UPPER LEVEL PLAN

POTENTIAL REGIONAL IMPLEMENTATION



MODULAR GRID SIZE TRANSITIONS FROM BUILDING TO MESH

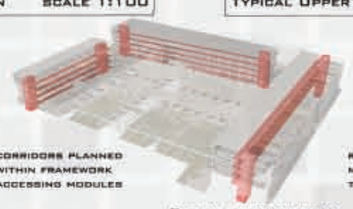
STRUCTURAL FRAMEWORK DIAGRAM

TRANSITION OF VEGETATIVE DENSITIES AND TYPES BETWEEN RIPARIAN & PARK

MESH DIAGRAM

DIVERSE MIXTURE OF UNIT TYPES AND CULTURES SHIFTING OVER TIME

PROGRAMMING DIAGRAM

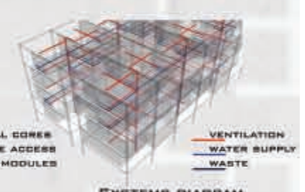


CORRIDORS PLANNED WITHIN FRAMEWORK ACCESSING MODULES

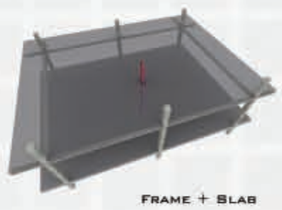
CIRCULATION DIAGRAM

ROOF GARDENS DRAIN TO MESH FOLLOWING CHANNELS TO RAINTANKS UNDER MESH

WATER DRAINAGE/RETENTION DIAGRAM



SYSTEMS DIAGRAM

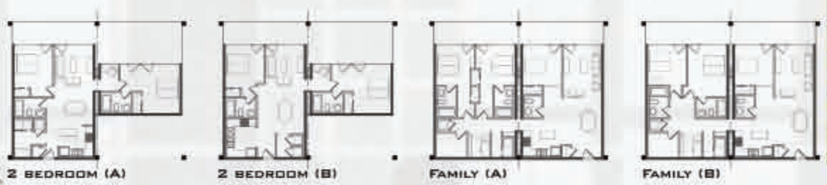


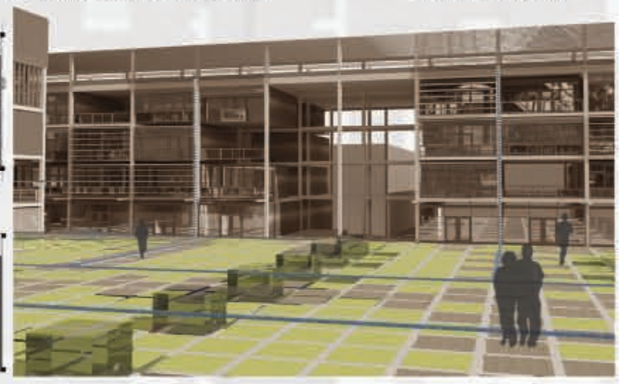
FRAME + SLAB

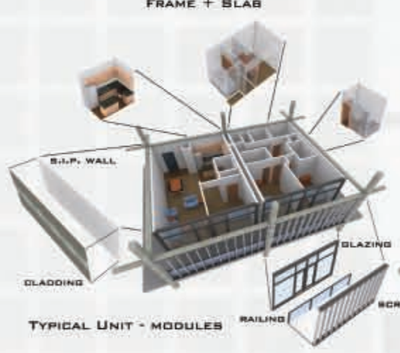
FRAME + SLAB + MODULE

PROGRAM LEGEND

UNIT PLANS — SCALE 1:16





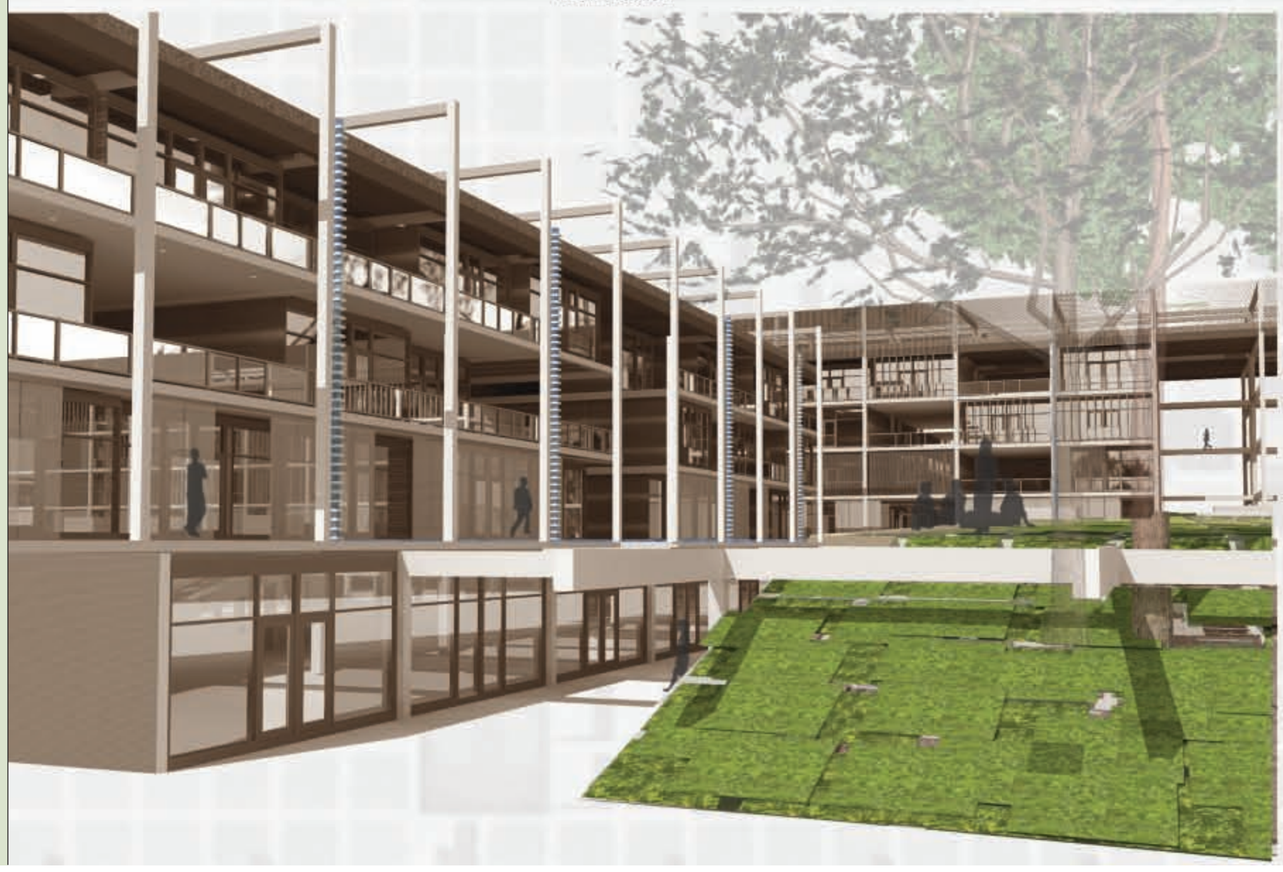


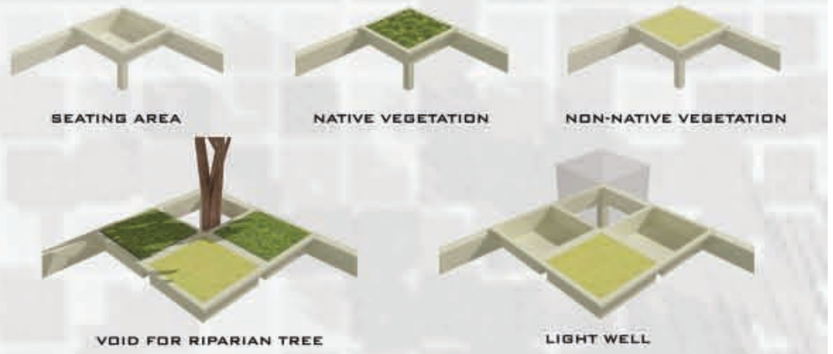
TYPICAL UNIT - MODULES

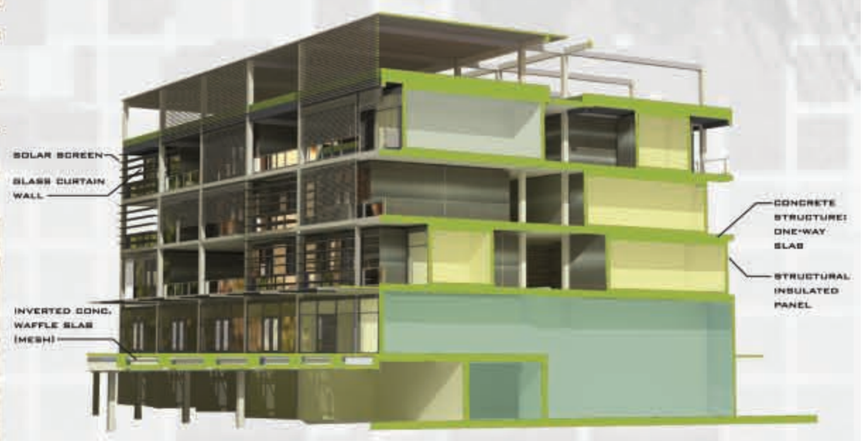
TYPICAL UNIT - SYSTEMS (OPEN SCREEN)

"As human development continues its expansion into natural environments, the edges created will increasingly form the critical point for interactions between human-made and natural habitats." -- Dramstad, Olson, Forman Landscape Ecologies

MESH COMPONENT DETAILS







SECTION PERSPECTIVE THROUGH NORTH STRUCTURE

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serves 1.4 million people who live in the 25 cities and three counties of the Portland metropolitan area. Metro's Nature in Neighborhoods initiative brings the regional government and local jurisdictions together to help ensure that the region's wildlife and people thrive in a healthy urban ecosystem.

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Nature in Neighborhoods:
Integrating Habitats Winners Series

Blend. Balance. Integrate.

Collaborate to redefine the built environment and restore nature.

More than 100 teams from around the world submitted entries to the Integrating Habitats design competition, proving that every space in which we live, work, shop and play can create places for both people and nature. These designs redefine current standards of environmental sustainability. The award winners illustrate new types of nature-friendly designs that balance development, human needs and the health of natural systems we all depend upon.

www.oregonmetro.gov/integratinghabitats

"By recognizing the importance of integrating habitats into a metropolis, Portland, Oregon has taken the lead in demonstrating what it *should* mean to be green."

— Joan Nassauer, jurist